REMARKS

Applicants respectfully request reconsideration that independent claims 9 and 12-13 are obvious in view of the cited art.

The Examiner stated that Caroli discloses in paragraph [0048] that: *"[...] Wavelength blocker 440 provides an added benefit by minimizing amplified spontaneous emission (ASE) noise that may be generated by optical amplifier 438. Again, wavelength blocker 440 may also include a dynamic gain equalization function (DGEF) to provide a per-channel gain equalization capability so that the power of the optical channels being added can be maintained at a level approximately equal to the average of the power of the optical channels in the "through" path 426."*

However, the benefit of the increased signal-to-noise ratio, which the Examiner relied on in maintaining the obviousness rejection, is ***not*** discussed by Caroli. Moreover, this is the only paragraph in Caroli where noise in an optical channel is even discussed, and is discussed exclusively in relation to the amplifier 438. There is nothing in this paragraph that would suggest any relation between the ASE noise, the wavelength blocker and the sources.

Minimizing ASE noise is mentioned as an additional benefit, and is not discussed anywhere else in Caroli. In this single sentence, the ASE noise is not presented as a major concern. Since the ASE noise is not a major concern, and since reducing the ASE noise in Caroli is just a side effect (i.e., any added benefit is not worth discussing in more than the one sentence), then applicants respectfully submit that a skilled person, based on Caroli's disclosure, would not be motivated to search for ways of improving it further.

Similarly, Caroli is not concerned with the sources of optical signals. In the whole disclosure, Caroli only refers to N ***optical channels*** 125 that are multiplexed, and never to ***sources***

of optical signals. When Caroli discusses the DGEF function of equalizing the power of the optical channels in paragraphs 0034 and 0048, it is done exclusively in the context of optical amplifiers through which the optical channels traverse, and making them approximately equal to the average power of the channels in the through path. There is no suggestion whatsoever that a ***source*** of optical signal should operate on any specific power level.

Therefore, the Examiner's contention that "*If the sources are running below a predetermined level, the DGEF or attenuator would not participate in the controlling, and the desired power level may not be obtained.*" is ***not based on the disclosure*** of Caroli. Caroli is ***only*** concerned with equalizing the power levels to compensate for power divergence that occurs after the optical channels traverse an optical amplifier.

In consequence, there is nothing in Caroli that would motivate a person skilled in the art to do anything with optical ***sources*** to further improve the solution of Caroli. Without such motivation, the skilled person would not attempt to combine the teaching of Caroli with that of Corio.

Applicants further submit that Caroli and Corio would not be combined by a person skilled in the art, because they relate to two remote fields of technology. Caroli is concerned with optical telecommunications networks based on WDM technology. Corio is concerned with lasers for printers.

There are many differences between laser sources for WDM networks and for printers.

A first difference relates to wavelength range. WDM lasers work at around 1550 nm, where fiber attenuation is lower, and erbium doped fiber amplifiers can be used. Lasers for use in laser printers work at around 600 nm - 800 nm. See, for example, http://www.sony.net/Products/SC-HP/pro/laser_diode/lbp.html). This different wavelength would make lasers for use in laser printers definitely ***unfit*** for use in WDM networks.

A second difference relates to the quality of signal. The main requirements for lasers used in WDM and DWDM networks are appropriate frequency stability, carrier stability and low phase noise. Frequency stability in DWDM optical networks must comply with a frequency grid defined by ITU-T, where consecutive frequencies are typically spaced 100 GHz apart. In the case of lasers for printers, frequency and carrier stability are not that important and can be lower.

Fixing toner on a sheet of paper works on a simple principle: the more energy that is transferred, the more pigment is fixed in a given time, and the darker the spot becomes. Stability of the optical signal in the time domain in laser printing does not come into play at all. A very distorted pulse of light in a laser printer would still work well provided that the right amount of energy was transferred.

On the other hand, optical telecommunications networks, like WDM and DWDM, are different. On the remote side of the optical fiber link, which could be tens or hundreds of miles long, is a receiver that must be able to recognize the pulse coming out from the fiber, and understand what is the symbol actually being received. For that, the signaling pulses do need suitable integrity of the optical pulses as they come out from the fiber. The better stability of the frequency of the signal at the generation point, the longer it can travel along the fiber, and still be recognized by the receiver. This ***cannot*** be achieved using the same lasers as used in printers.

A third difference relates to modulation. Corio discloses directly modulated lasers. Pulses obtained from directly modulated lasers have quite poor integrity of the optical signal, and nesting two directly modulated lasers to obtain a multi-level amplitude-modulated system, as disclosed by Corio, would make the integrity of the signal even worse. Contrary to that, in optical telecommunications networks (e.g., based on WDM and DWDM), external modulation of the laser beam is used, i.e., the laser is always ON, and a kind of optical "shutter" is used to make digital zeros and ones.

In consequence, a person skilled in the art would not combine the teaching of Corio with that of Caroli, because it would be well known that laser sources used in printers use a different wavelength and generate signals of inferior quality. The specific solution disclosed by Corio of direct modulation is ***contrary to the standard practice*** known in the art of optical telecommunications networks.

It must also be noted that because Caroli does not disclose any source (only refers to N optical channels 125), even if one would try to combine the solution of Caroli with that of Corio, then the combination would result in a solution with directly modulated laser sources, which is contrary to the practice of designing optical telecommunications networks, and any such combination would be immediately ***rejected***.

When the arguments given above are considered, either singly or in combination, it is clear that the invention, as defined in independent claims 9 and 12-13, is non-obvious. To repeat, there is nothing in Caroli that would suggest or motivate a person skilled in the art to do anything with signal ***sources***, because there are no signal sources disclosed, and no problem is attributed to

signal sources in Caroli. When there is no motivation, the skilled person would not modify the arrangement of Caroli.

Moreover, Corio discloses a solution that relates to a different field of technology, i.e., a solution that, due to its inadequate quality of signal, ***cannot*** be used in WDM network. When this is taken into account, it strengthens applicants' view that a person skilled in the art would not combine Caroli and Corio.

Finally, when there is no motivation to modify Caroli, a person skilled in the art would certainly not modify it with a solution that is not suitable for it. Allowance of the independent claims 9 and 12-13 is respectfully requested.

Petition is hereby made for a two-month extension of the period to respond to the outstanding Official Action to July 4, 2010. The Commissioner is authorized to charge $490.00, as the Petition fee, any additional charges, or any overpayment, in connection with the filing of this response, or any such deficiency, or credit any such overpayment, to Deposit Account No. 11-1145.

Wherefore, a favorable action is earnestly solicited.

Respectfully submitted,

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